In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Currently Amended) An article comprising:

a nanoscopic pathway having a conductivity;

an insulating dielectric ~~insulating~~ surrounding the nanoscopic pathway; and

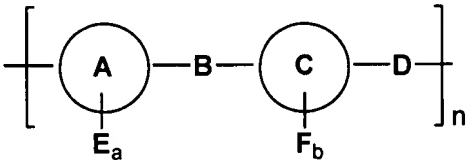
a nanoscopic switch in electronic communication with the nanoscopic pathway being capable of altering the conductivity of the nanoscopic pathway.

2. (Original) The article of claim 1, wherein the nanoscopic pathway comprises an organic group.

3. (Original) The article of claim 2, wherein the nanoscopic pathway comprises a conducting polymer.

4-105. (Cancelled)

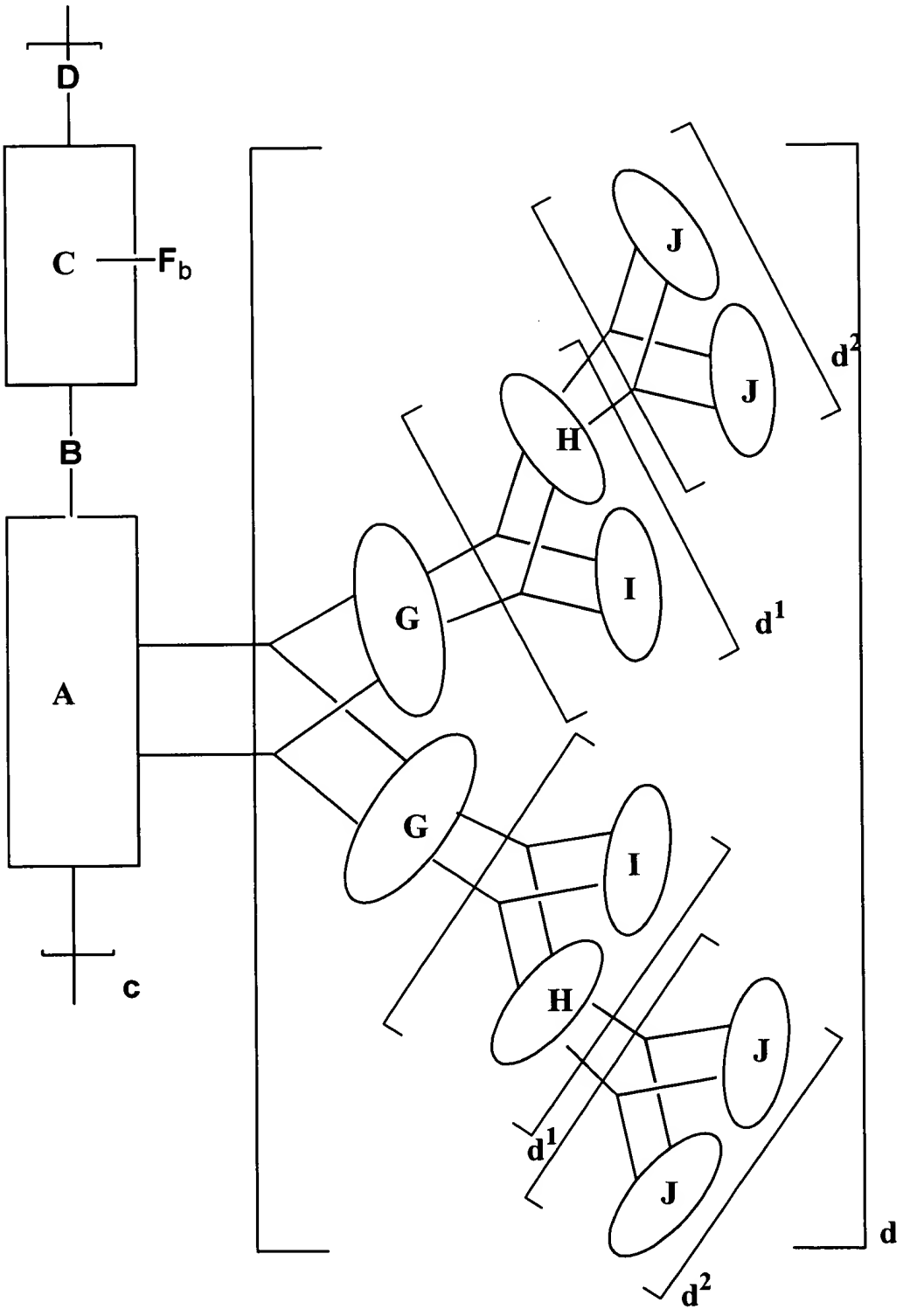
106. (Currently Amended) The article of claim 3, wherein the conducting polymer has a structure comprising the formula:



wherein A and C are aromatic groups; B and D can be a heteroatom or metal in the main chain and chosen from a group of N-R, P-R, P=O, S, AsR, Se, or -CC-M-CC-(M=FeL_x, RuL_x, PdL_x, PtL_x, CoL_x, RhL_x, where L is ~~a netural~~ neutral (phosphine, nitrogen, or π-arene based ligand) or charged (nitrogen, oxygen, or charged π-arene ligand), or are selected from the group consisting of a carbon-carbon double bond and a carbon-carbon triple bond; and any hydrogen on aromatic group A and C can be replaced by E and F respectively, wherein ~~at least one of E and F~~

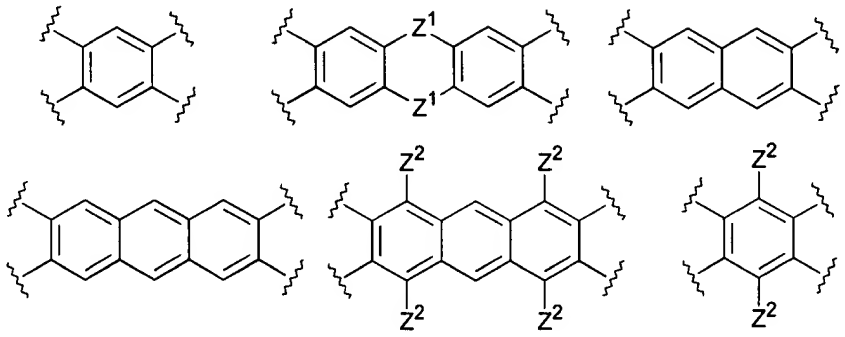
~~comprises the first and second group,~~ a and b are integers which can be the same or different and a = 0 - 4, b = 0 - 4 such that when a = 0, b is nonzero and when b = 0, a is nonzero, and at least one of E and F includes a bicyclic ring system having aromatic or non-aromatic groups optionally interrupted by O, S, NR^1 and CR^1_2 wherein R^1 is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, C_1-C_{20} alkoxy and aryl and n is less than about 10,000.

107. (Original) The article of claim 106, wherein E_a is covalently attached to A, and the polymeric composition comprises the structure:

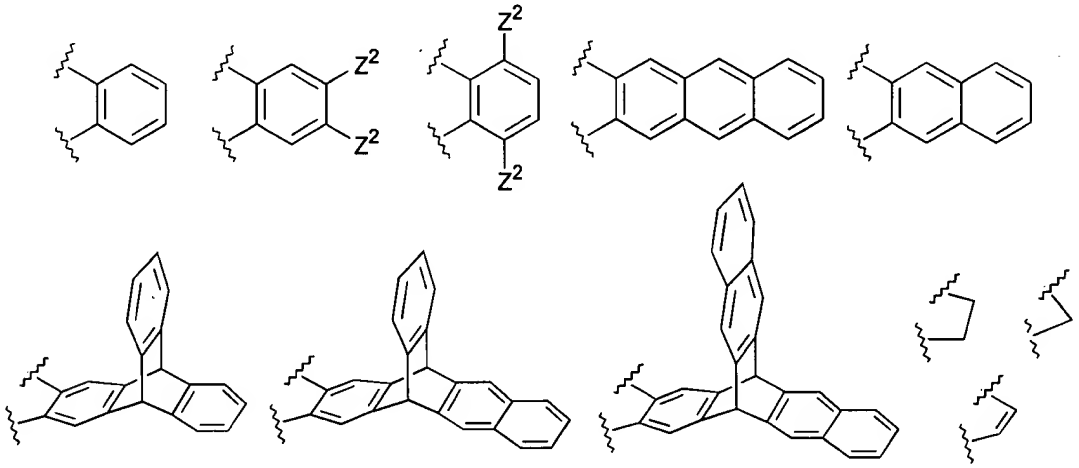


wherein G, H, I, and J are aromatic groups, d = 1, 2, and d^1 = 0, 1, such that when d^1 = 0, d^2 = 0 and when d^1 = 1, d^2 = 0, 1.

108. (Original) The article of claim 107, wherein G and H may be the same or different, and each is selected from the group consisting of:

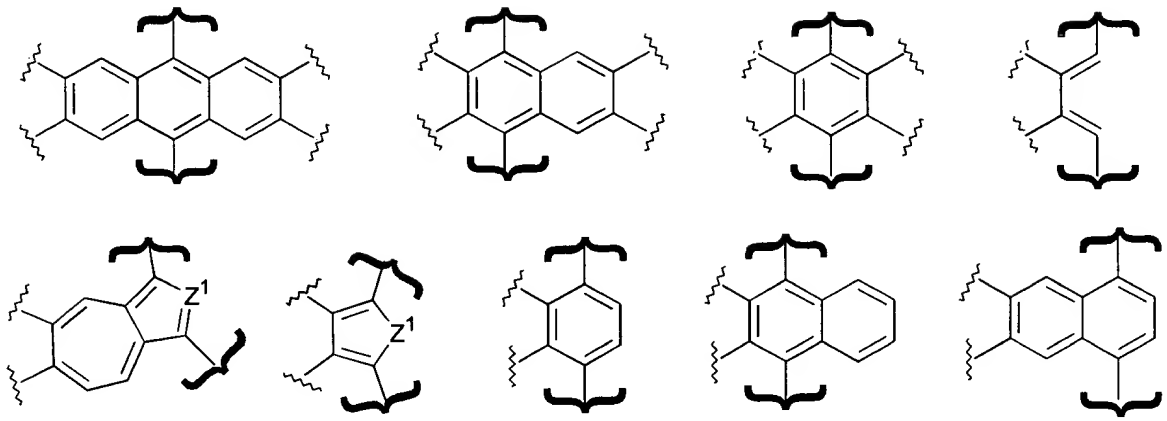


I and J may be the same or different and each is selected from the group consisting of:



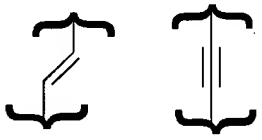
wherein any hydrogen in G, H, I and J can be substituted by R^2, R^2 is selected from the group consisting of C_1-C_{20} alkyl, aryl, C_1-C_{20} alkoxy, phenoxy, C_1-C_{20} thioalkyl, thioaryl, $C(O)OR^3$, $N(R^3)(R^4)$, $C(O)N(R^3)(R^4)$, F, Cl, Br, I, NO_2, CN, acyl, carboxylate, hydroxy, R^3 and R^4 can be the same or different and each is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl, Z^1 is selected from the group consisting of O, S and NR^8 wherein R^8 is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl, and Z^2 is selected from the group consisting of F, Cl, OR^3, SR^3, NR^3R^4 and $SiR^8R^3R^4$.

A is selected from the group consisting of:



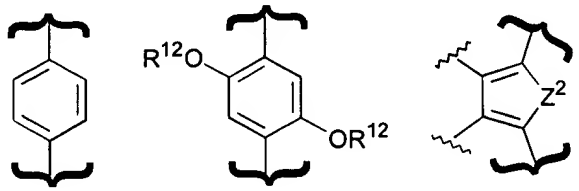
wherein any hydrogen in A can be substituted by R^5, R^5 is selected from the group consisting of C_1-C_{20} alkyl, aryl, C_1-C_{20} alkoxy, phenoxy, C_1-C_{20} thioalkyl, thioaryl, $C(O)OR^6$, $N(R^6)(R^7)$, $C(O)N(R^6)(R^7)$, F, Cl, Br, NO_2, CN, acyl, carboxylate, hydroxy; R^6 and R^7 can be the same or different and each is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl; Z^1 is selected from the group consisting of O, S and NR^8 and R^8 is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl;

B and D can be the same or different and each is selected from the group consisting of:



wherein any hydrogen in B and D can be substituted by R^9, R^9 is selected from the group consisting of C_1-C_{20} alkyl, aryl, C_1-C_{20} alkoxy, phenoxy, C_1-C_{20} thioalkyl, thioaryl, $C(O)OR^{10}$, $N(R^{10})(R^{11})$, $C(O)N(R^{10})(R^{11})$, F, Cl, Br, NO_2, CN, acyl, carboxylate, hydroxy, R^{10} and R^{11} can be the same or different and each is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl;

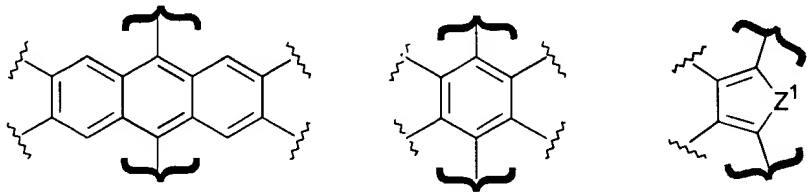
C is selected from the aromatic group consisting of:



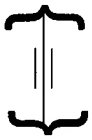
wherein R^{12} is selected from the group consisting of hydrogen, C_1-C_{20} alkyl and aryl; any hydrogen in C can be substituted by F which is represented by R^{13}, R^{13} is selected from the group

consisting of C_1-C_{20} alkyl, aryl, C_1-C_{20} alkoxy, phenoxy, C_1-C_{20} thioalkyl, thioaryl, $C(O)OR^{14}$, $N(R^{14})(R^{15})$, $C(O)N(R^{14})(R^{15})$, F, Cl, Br, NO_2, CN, acyl, carboxylate, hydroxy; R^{14} and R^{15} can be the same or different and each is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl; Z^2 is selected from the group consisting of O, S and NR^{16} and R^{16} is selected from the group consisting of hydrogen, C_1-C_{20} alkyl, and aryl.

109. (Original) The article of claim 108, wherein A is selected from the group consisting of:



and both B and D are:



110-126. (Cancelled)